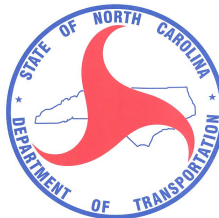


# ANNUAL REPORT FOR 2009



**US 64 Bypass Mitigation Site  
Tyrrell County  
TIP No. R-2548E**



Prepared By:  
Natural Environment Unit & Roadside Environmental Unit  
North Carolina Department of Transportation  
August 2009

## TABLE OF CONTENTS

SUMMARY .....	1
1.0 Introduction .....	2
.1 Project Description .....	2
.2 Purpose .....	2
.3 Project History .....	2
2.0 Vegetation: .....	3
.1 Success Criteria .....	3
.2 Description of Species.....	3
.3 Results of Vegetation Monitoring .....	3
.4 Conclusions. ....	4
3.0 Overall Conclusions and Recommendations .....	4

## FIGURES

Figure 1 – Site Location Map .....	5
------------------------------------	---

## APPENDICES

Appendix A – Site Photos	
--------------------------	--

## **SUMMARY**

The US 64 Bypass Mitigation Site is located in Tyrrell County. The site was planted in December 2005 and was designed as mitigation for wetland impacts associated with roadway project R-2548.

The mitigation encompasses approximately 6.13 acres total of wetland restoration. The restoration effort involved the removal of the roadbed to existing wetland elevation, undercutting approximately 12 inches of soil, and back filling with available material. The site was then planted and will be monitored to ensure that it meets the vegetation success criteria. No hydrologic monitoring is required for this project; however, vegetation monitoring is required for five years.

There were 3 vegetation monitoring plots established throughout the 6.13 acre planting area. The 2009 vegetation monitoring of the site revealed an average tree density of 481 trees per acre. This average is well above the minimum success criteria of 320 trees per acre. NCDOT supplementally planted this site in February 2007.

NCDOT will continue vegetation monitoring at the US 64 Bypass Mitigation Site.

## **1.0 INTRODUCTION**

### **1.1 Project Description**

The US 64 Bypass Mitigation Site is located at the existing US 64 roadbed in Tyrrell County just west of Columbia (Figure 1). The site consists of approximately 6.13 acres of mitigation for wetland impacts associated with project R-2548.

### **1.2 Purpose**

In order for a mitigation site to be considered successful, a site must meet vegetation success criteria. This report details the vegetation monitoring in 2009 at the US 64 Bypass Mitigation Site. Hydrologic monitoring was not required for the site.

### **1.3 Project History**

December 2005	Site planted
August 2006	Vegetation Monitoring (1 year)
February 2007	Site Supplementally Planted
August 2007	Vegetation Monitoring (1 year restart)
July 2008	Vegetation Monitoring (2 year)
August 2009	Vegetation Monitoring (3 year)

## 2.0 VEGETATION: US 64 BYPASS MITIGATION SITE (YEAR 3 MONITORING)

### 2.1 Success Criteria

Success Criteria states that the permittee must attain and document a minimum survival rate of 320 planted trees per acre surviving for the first three years, decreasing by 10 percent for years four and five (260 trees per acre minimum for year five).

### 2.2 Description of Species

The following wetland species were planted in the Wetland Restoration Area:

*Nyssa sylvatica* var. *biflora*, Swamp Blackgum

*Taxodium distichum*, Baldcypress

*Quercus phellos*, Willow Oak

*Nyssa aquatica*, Water Tupelo

*Chamaecyparis thyoides*, Atlantic White Cedar

*Quercus lyrata*, Overcup Oak

### 2.3 Results of Vegetation Monitoring

Plot #	Swamp Blackgum	Baldcypress	Willow Oak	Water Tupelo	Atlantic White Cedar	Overcup Oak	Total (Year 3)	Total (at planting)	Density (Trees/Acre)
1	1	10	6	4	2	14	37	42	599
2	5	10		9	2	6	32	50	435
3	5	12	5	5			27	45	408
Average Density (Trees/Acre)									481

**Site Notes:** Vegetation plots 1 and 2 are 50 x 50 foot plots. Vegetation plot number 3 is 100 x 25 foot due to the location where the plot was set. The at-planting numbers changed from the 2006 at-planting counts due to the

supplemental planting that took place in February 2007. The planted trees had some competition, mostly from baccharis. Other species noted include: fennel, *Juncus* sp., tearthumb, cattail, woolgrass, cut grass, red maple, stinkweed, black willow, sweetgum, ragweed, baccharis, goldenrod, and various grasses.

## **2.4 Conclusions**

There were 3 vegetation monitoring plots established throughout the 6.13 acre planting area. The 2009 vegetation monitoring of the site revealed an average density of 481 trees per acre. This average is well above the minimum success criteria of 320 trees per acre for year three.

## **3.0 OVERALL CONCLUSIONS AND RECOMMENDATIONS**

The following report summarizes the monitoring activities that have occurred in the past year for the US 64 Bypass Mitigation Site. Monitoring activities in 2009 represent the third year of monitoring for the site. The site must demonstrate vegetation success for a minimum of five years or until the site is deemed successful.

There were 3 vegetation monitoring plots established throughout the 6.13 acre planting area. The 2009 vegetation monitoring of the site revealed an average density of 481 trees per acre. This average is well above the minimum success criteria of 320 trees per acre for year three. NCDOT supplementally planted this site in February 2007.

NCDOT will continue vegetation monitoring at the US 64 Bypass Mitigation Site.

T-413 P.001/001 F-454

919 733 9810

FROM-NCOTRoads:deEnvi

08-07-2006 08:12

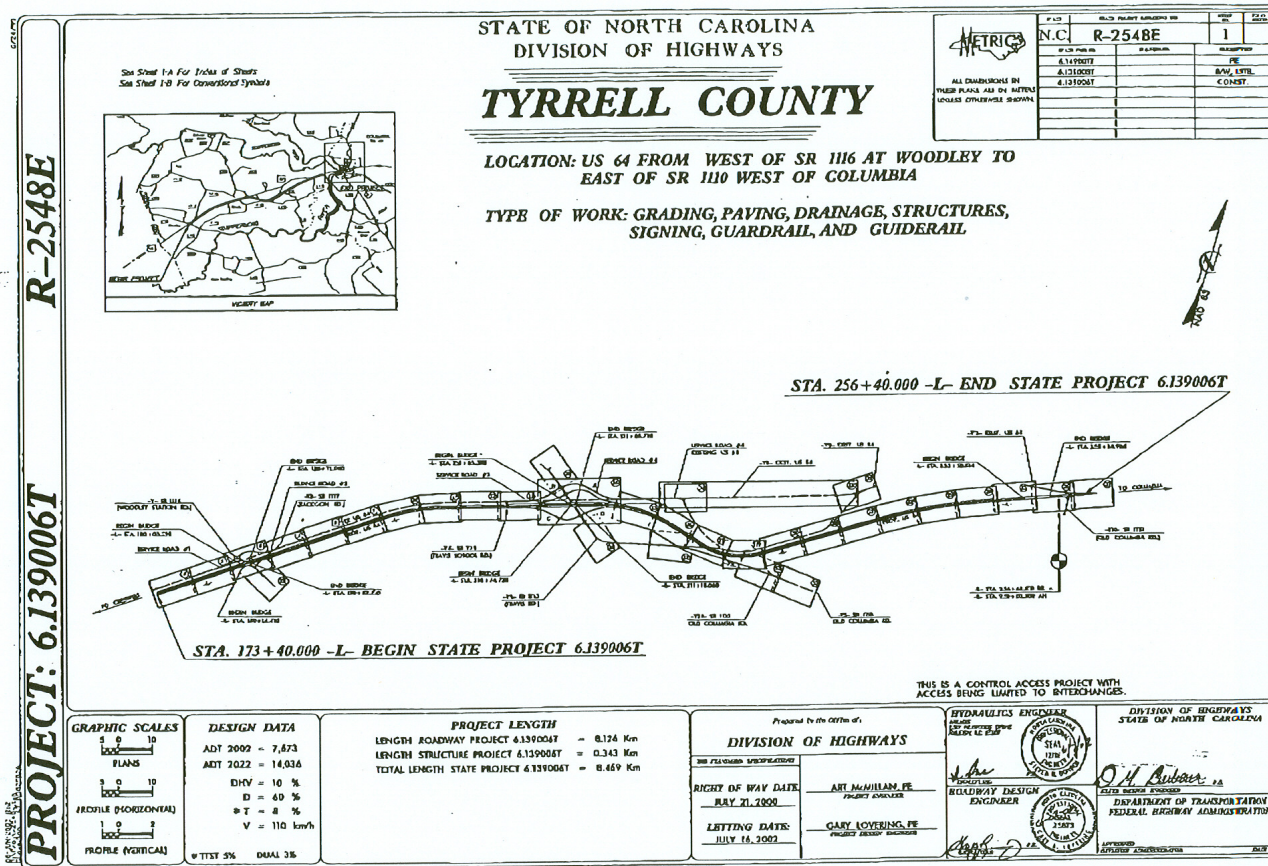


Figure 1 - Site Location Map

**APPENDIX A**

**SITE PHOTOS**



# US 64 Bypass



Photo 1



Photo 2



Photo 3



Photo 4

US 64 Bypass Site  
R-2548E  
Tyrrell County

